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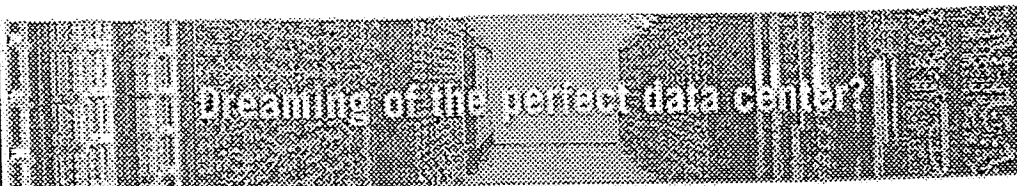
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Chunghwa Picture Tubes, Ltd. Company Profile

Chunghwa Picture Tubes makes optoelectronic display components used in TFT-LCD (thin-film transistor liquid-crystal display), projection, PDP (plasma display panel), and CRT (cathode ray tube) applications. The company, which was established in 1971, also makes color picture tubes and electron guns. Chunghwa is active in Taiwan, China, and Malaysia.

Contact Information

Address: No. 1127, Ho-ping Rd.
Padeh, Taoyuan, Taiwan
Phone: +886-3-367-5151
Fax: +886-3-377-3189

Financial Highlights

Fiscal Year End:	December
Revenue (2004):	3671.50 M
Revenue Growth (1 yr):	40.70%
Employees (2004):	20,000
Employee Growth (1 yr):	0.00%

Key People

- Chairman and President: C. H. (Frank) Lin
- CFO: James Wu

Industry Information

Sector: [Technology](#)
Industry: [Diversified Electronics](#)

Top Competitors

- [AU Optronics Corp. \(AUO\)](#)
- [Chi Mei Optoelectronics Corporation](#)
- [L.G.Philips Displays International Ltd.](#)

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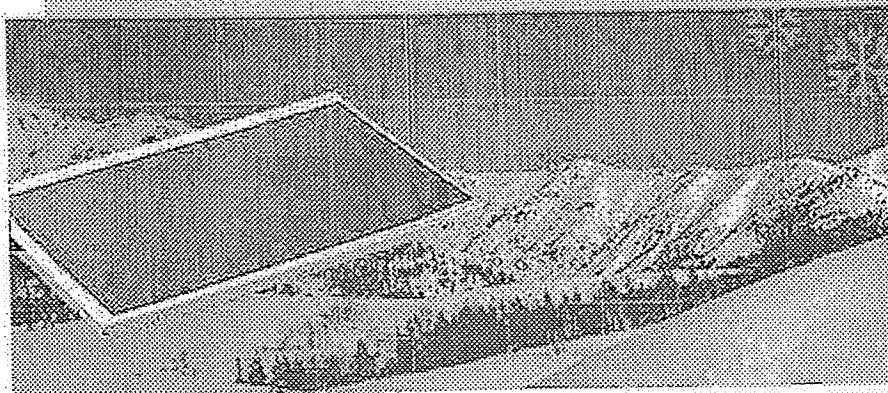
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TFT

Exclusive TFT Color rendering,
other special features.

Hot News

About CPT

Established since 1971, CPT is following the philosophy of repay the country with Industrial contributions..., that the Chairman of Tatung Corporation, Principal and Professor, Lin, Ting-sun has been base on from the very beginning, when dedicated itself to R&D and production of Picture Tubes, the vital component of Taiwan video products.

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2005.10.20

2005 Q3 Investor Conference

2005.10.19

CPT at the FPD International 2005

2005.10.6

CPT September 2005 Sales Report

2005.9.6

CPT August 2005 Sales Report

Spot Light



Monthly Report
The latest data is
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Our Products

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CPT being the pioneer of TFT-LCD mass production technology leads in the domestic industry with complete product lines including mass production of PDP. We commit to open up your perspective v dedicated intentions, leading you into a brand new realm of beauty of lights, electric, video and communication.

TFT Products



TFT-LCD is compact and space saving (only 15~20% to that of CRT), featuring merits of non-radioactive, low power consumption, low heat, long life span, soft picture and no eye-harms.

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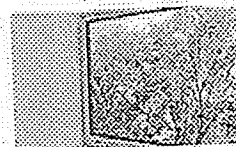
CRT Products



CRTTV product is based on technology of over hundred years and we have absolute superiorities in the aspects of true color rendering, real time response speed, product life span and cost and price.

[▶ More](#)

PDP Products



PDP products are feature resolution, brightness, ar contrast, so that picture v color is brought to you wi bountiful vividness of the sensation.

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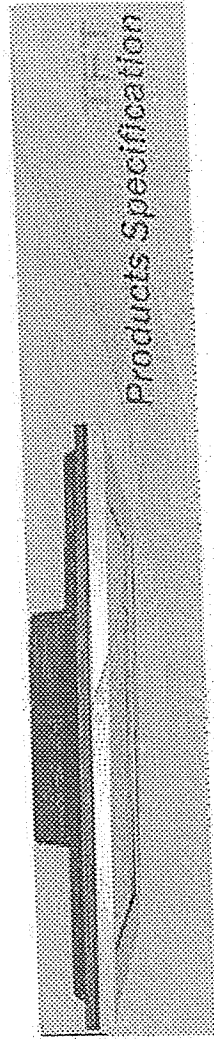
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Products Specification

Mobile Phone Application

Model	Resolution	Contrast	Response time(ms)	Brightness(cd/m2)	Interface
1.8"					
CLAA018QQA01	QQVGA	200:1	30	180	CPU
CLAA018QCA01	QCIF+	200:1	30	200	CPU
2.2"					
CLAA022QVA01	QVGA	200:1	30	180	CPU

Mobile Phone Application

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CHUNGWA PICTURE TUBES, LTD.

Interface

Brightness(cd/m2)

Response time(ms)

Contrast

Resolution

Model

4.0"

CLAA040WQA01

WQVGA

300:1

30

200

TTL

::: Portable DVD/Car Entertainment Application

Model

Resolution

Contrast

Response time(ms)

Brightness(cd/m2)

Interface

7"

CLAA070WA03

WQVGA

400:1

30

350

ANALOG

CLAA070VA01

WVGA

400:1

30

220

TTL

9"

CLAA090WA01

WQVGA

350:1

30

400

ANALOG

CLAA090VA01

WVGA

350:1

30

400

TTL

::: Note PC Application

Model

Resolution

Contrast

Response time

Brightness(cd/m2)

Interface

12.1W"

CLAA121WA01/01A

1280*800

300:1

25ms

200

LVDS

14.0"W

CLAA140WA01/01A

1280*800

450:1

25ms

200

LVDS

14.1"

CLAA141XD05

1024*768

350:1

25ms

200

LVDS

14.1"W

CLAA140WB02/02A

1280*800

400:1

25ms

200

LVDS

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15.4W"				
CLAA154WA01Q/01AQ	1280*800	600:1	25ms	250
CLAA154WA05/05A	1280*800	500:1	25ms	190
CLAA154WA06/06A	1280*800	600:1	25ms	350
				LVDS
				LVDS
				LVDS

::: Monitor Application

Model	Resolution	Contrast	Response time	Brightness(cd/m2)	Interface
15"					
CLAA150XP01/01P	1024*768	500:1	16ms	250/320	LVDS
CLAA150XP02/02A	1024*768	500:1	16ms	250	RSDS
17"					
CLAA170EA07Q	1280*1024	500:1	8ms	300	LVDS
CLAA170EA08Q	1280*1024	500:1	8ms	300	RSDS
CLAA170ES01	1280*1024	600:1	8ms	300	LVDS
19"					
CLAA190EA05	1280*1024	700:1	8ms	270	LVDS

::: TV Application

Model	Resolution	Contrast	Response time	Brightness(cd/m2)	Interface
15"					
CLAD018QQA01	1024*768	500:1	16ms	400	LVDS
17"					
CLAA020QVA02	1280*1024	500:1	12ms	400	LVDS

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20.1" CLAA150XH01	640*480	500:1	16(GTG)ms	500	LVDS
20.1"W CLAA150XH01	1680*1050	600:1	8ms	300	LVDS
26"W CLAA150XH01	1366*768	1000:1	10(GTG)ms	550	LVDS
32"W CLAA150XH01	1366*768	1000:1	10(GTG)ms	550	LVDS
37"W CLAA150XH01	1366*768	1000:1	10(GTG)ms	550	LVDS

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http://www.cptt.com.tw/english/03_products/01_01_technology.asp?pid=25

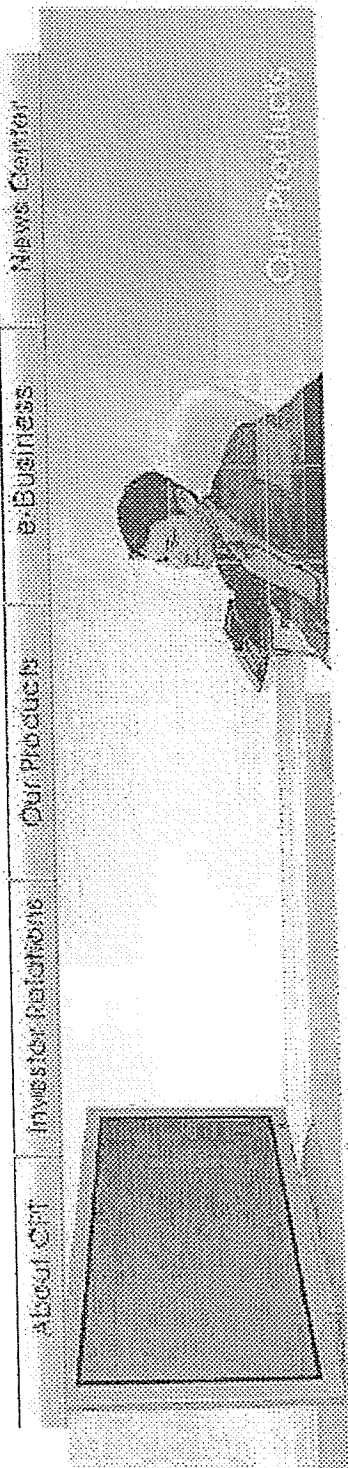
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Our Products

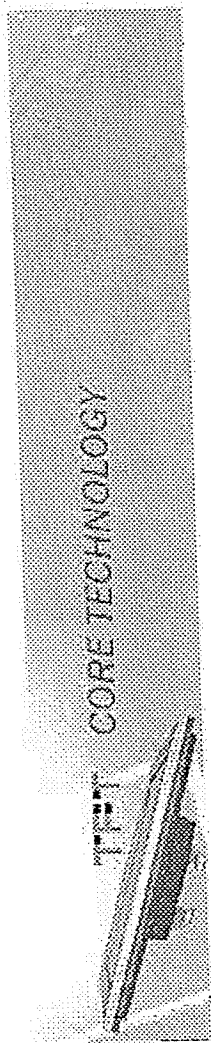
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Core Technology



::: Plans on R&D of LTPS technology

I. Introduction

LTPS (Low Temperature Poly-Silicon) TFT features High Mobility (Approx. 100 times) and small component, and is suitable for high aperture and high resolution products. Since the driver circuitry, power supply, control IC etc. can be integrated into a TFT panel, CPT is taking the LTPS technology as the first priority for R&D.

II. R&D Objectives

1. Set up R&D of One-Pass-Line LTPS with a small production line
2. Develop LTPS technology for small to medium size high-end products
3. Cope with completion of 28" LTPS HDTV sectional project
4. Use LTPS as a baseline to develop AM-OLED display technology

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:: R&D Plan for OLED Technology**I. Introduction**

OLED (Organic LED), a new generation of display featuring lighter and thinner appearance with no viewing angle limitations as well as a self-luminescence property, which makes expensive materials and process of color filter, backlight, reflector and liquid crystal all unnecessary. Combined with a TFT panel to make the AMOLED (Active Matrix OLED) is the key technology for the next plat display.

II. R&D Objectives

1. Set up semi-mass production line, develop process for AMOLED component and a small production line.
2. Coping with the LTPS Plan, develop high-end products technology for small to medium size AMOLED Panel.

[!\[\]\(830769b31eeeaca920791081939ff8ba_img.jpg\) DOWNLOAD](#)**:: R&D Plan on Copper Wire Process****I. Introduction**

Length of the metal wire increase tremendously when TFT-LCD gaining on screen size. Speed of signal transmission is up to the product of the resistance (R) and capacitance (C) of the wire; smaller the RC product higher the speed. In the present process technology, resistance of aluminum is about $3.5\mu\Omega\text{-cm}$ while theoretical value of copper is only $1.7\mu\Omega\text{-cm}$. The time delay in the Gate wire is worsened when the panel size increase. If copper can be used, a smaller area is capable of loading larger current and the density of the circuitry is allowed to increase.

II. R&D Objectives

1. Develop compound structure copper wire to prevent diffusion of copper ion into gate insulation layer and affect the component functionality.
2. Develop cleaning process to eliminate surface particles on the front and rear face of the substratum, for ensuring active layer copper concentration lower than 12atoms/cm^2 so that component will not be affected.
3. This plan is in cooperation with ITRI ERSO, implemented in two 2-year plans. The first phase of the plan is scheduled to complete by 2005 Q4 and introduce preparation of mass production.

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:: R&D Plan for Alignment Film Printing by Ink Jet Technology**I. Introduction**

Use digital ink jet technology to design alignment layer directly on computer; similar to the ink jet printer, spray the alignment liquid onto position required. Featuring model flexibility, material saving, maintenance convenience and easy process control.

II. R&D Objectives


1. Create alignment liquid inkjet equipment
2. Develop TN (TwistNematic LCD Display) ,MVA (Multi-DomainVerticalAlignment wide viewing angle technology) , IPS (InPlaneSwitch wide viewing angle technology) type alignment materials.
3. Introduction of next generation substrate alignment liquid inkjet technology.
4. Develop other applications of inkjet technology on Flat Panel Display, such as C/F (Color Filter), O-TFT (Organic Thin-Film Transistor), P/S (Photo Spacer), PLED (Polymer Light Emitting Diode) etc.

 DOWNLOAD**:: Plans on R&D of Laser Cutter****I. Introduction**

Using the heat expansion principle, passing glass through a small area of high temperature and then quickly cool it down. By utilizing the unbalanced residual strain along the cutting line and the growth of the cracking line, cutting effect is accomplished. Featured with merits of high precision, neat cutting edge, high strength edge, and requiring no Short/Ring chamfer or cleaning.

II. R&D Objectives

1. Develop laser cutting technology for single panel and assembled panel.
2. Cope with OLED Plan and setup laser cutting process.
3. Introduce next generation laser cutting technology.


 DOWNLOAD**:: Plans on R&D of Non-contact Alignment Technology**

I. Introduction

The traditional alignment uses rubbing of cloth attached to the roller against the substrate to achieve alignment. But due to increase in the substrate size, the traditional method is limited owing to uniformity of the roller and cloth is hard to control, as well as influences from static electric and particle, causing the alignment unstable. UV alignment, ion beam alignment and plasma alignment are developed for solving the above problems.

II. R&D Objectives

1. Setup database of UV alignment, ion beam alignment and plasma alignment technologies.
2. Develop next generation alignment film material and deposit technology.
3. Introduce non-contact alignment technology for mass production of next generation panels.

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∴ R&D plan on Plasma flat light-source technology

I. Introduction

Compared to the current CCFL backlight technique, flat light-source features high uniformity, low temperature on the backlight module, long life span and conformity with EPA requirements (no Hg content). Development of this Plasma flat light-source should be the key factor for a continuous LCDTV technology.

II. R&D Objectives

1. Setup R&D and semi-mass production line by the end of 2004.
2. Combining with 6-generation product line to setup OnePassLine mass production line.
3. Develop flat backlight technique for 32" , 37" and 42" panels.

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
∴ R&D Plan for LED Backlight Technique

I. Introduction

LED (Light emitted diode) is a solid state light source characterized by the merits of super long life span, power saving, low voltage, high color rendering, low temperature, quick responding speed, conformity to EPA requirements (no Hg content) which are all superior to the current CCFL light source. This light source is currently being used for many a lighting and small size cell phone backlight applications. It is obvious that LED is taking the place of CCFL as a light source.

II. R&D Objectives

1. Accomplish development of 20-30"LED backlight module.
2. Accomplish planning for mass production of 7" vehicle use LED backlight module by the end of 2004.
3. R&D for related technology for matching LED light source with high speed LCD

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
❖❖ R&D plan for CRT rear projection optical engine

I. Introduction

3 Cathode Ray Tubes (CRT) are used to project RGB original colors respectively and form a magnified full color image, featuring the merits of low cost, high resolution, vivid color, soft image and large size display.

II. R&D Objectives

1. Produce the large size and high luminance optical engine.
2. Develop high efficiency nano cathode materials.
3. Built-in auto convergence system.

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❖❖ R&D Plan on LCOS Rear Projection Optic Engine Technology

I. Introduction

LCOS (Liquid Crystal On Silicon) is a reflective liquid crystal panel that exploits the semiconductor process and liquid crystal injection technology to achieve high aperture rate and high resolution in a small area. Combining the LCOS panel with optical projection mechanism can produce a high resolution but low cost rear projection TV; a new solution for large size projection display technology.

II. R&D Objectives

1. 1. 52"720p Optical Engine
2. 65"1080p Optical Engine
3. Super thin TV Optical Engine

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